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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,606	09/28/2004	Jeffery R. Ihde	ITW7510.081	5605
33647	7590	05/03/2007		
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ITW)			EXAMINER	
136 S WISCONSIN ST			SHAW, CLIFFORD C	
PORT WASHINGTON, WI 53074				
			ART UNIT	PAPER NUMBER
			1725	
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			05/03/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/711,606

Applicant(s)

IHDE ET AL.

Examiner

Clifford C. Shaw

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-28 and 33 is/are rejected.
- 7) ☒ Claim(s) 3 and 29-32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1228, 0503.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_.

**Detailed Action**

1.) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2.) Claims 9-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There is no disclosure in the specification of a sensor to determine rotational direction of the ECM as set forth in claims 9-11. The specification therefore would not enable an artisan of ordinary skill to make and use the invention.

3.) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

Art Unit: 1725

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4.) Claims 18, 20, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marhofer et al. (5,932,123). Figures 4A and 4B and the discussion at columns 7-8 in the patent to Marhofer et al. (5,932,123) disclose a method of delivering a consumable for a welding process using electronically commutated motor 31 with feedback at 86 that adjusts the electronic commutation at 82. Claim 18 differs in calling for "feedback from a consumable delivery mechanism". This difference does not patentably distinguish over the prior art. It is considered obvious that motor 31 is part of a "consumable delivery mechanism" because this motor is the prime mover the wire feed arrangement in the system of Marhofer et al. (5,932,123) and thus must obviously be part of the consumable delivery mechanism.

5.) Claims 1, 2, 4-8, 14-17, 19, 24, 27, 28, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marhofer et al. (5,932,123) further in view of Rosen (3,586,222). Figures 4A and 4B and the discussion at columns 7-8 in the patent to Marhofer et al. (5,932,123) disclose a welding wire feeder and a method of delivering a consumable for a welding process using electronically commutated motor 31 with feedback at 86 that adjusts the electronic commutation at 82. The claims differ from the teachings of Marhofer et al. (5,932,123) in calling for torque control of the motor and in calling for a push-pull delivery process and in calling for a motor within a torch. These differences do not patentably distinguish over the prior

Art Unit: 1725

art. At the time applicant's invention was made, it would have been obvious to have incorporated the electronically commutated motor and motor control arrangement of Marhofer et al. (5,932,123) into any conventional welding wire feed configuration. In particular, it would have been obvious to have used the motor and motor control arrangement in a welding wire feeder that included torque sensing as part of the motor control, that included a push-pull motor system, and that included a motor in the torch, the motivation being the teachings of Rosen (3,586,222) that such features are useful for feeding wire to a weld (in the patent to Rosen (3,586,222), see: the discussion of torque control at col. 1, lines 60 through column 2, line 8 and at column 3, lines 14-16; the discussion of push-pull wire feed in column 1; and the discussion of a motor in a torch at column 1, lines 20-22 ).

6.) Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marhofer et al. (5,932,123) as applied to claim 18 above, and further in view of Huisman et al. (2004/0016735, cited by applicant). The only aspects of the claims to which the rejection above does not apply are the provisions for a pulsed welding process and for reversing the delivery of the consumable. These differences do not patentably distinguish over the prior art. At the time applicant's invention was made, it would have been obvious to have used the welding system control taught by Marhofer et al. (5,932,123) for any conventional type of welding method. In particular, it would have been obvious to have controlled a method that included a pulsed process and that included reversing the delivery of the consumable as claimed, the motivation being the teachings of Huisman et al. (2004/0016735) that such features are useful in a welding method (see the discussion at paragraphs 32 and 48-50 in Huisman et al. (2004/0016735)).

7.) Claims 12, 13, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marhofer et al. (5,932,123) taken with Rosen (3,586,222) as applied to claims 1, 2, 4-8, 14-17, 19, 24, 27, 28, and 33 above, and further in view of Huismann et al. (2004/0016735). The only aspects of the claims to which the rejection above does not apply are the provisions for a pulsed welding process and for reversing the delivery of the consumable. These differences do not patentably distinguish over the prior art. At the time applicant's invention was made, it would have been obvious to have used the welding system of the combination of Marhofer et al. (5,932,123) and Rosen (3,586,222) for any conventional type of welding method. In particular, it would have been obvious to have controlled a method that included a pulsed process and that included reversing the delivery of the consumable as claimed, the motivation being the teachings of Huismann et al. (2004/0016735) that such features are useful in a welding method (see the discussion at paragraphs 32 and 48-50 in Huismann et al. (2004/0016735)).

8.) Claims 3 and 29-32 are objected to for depending from rejected claims, but would be given favorable consideration if recast in independent form to include all of the limitations of the parent claims. None of the prior art of record teaches or suggests a welding-type wire feeder with a controller programmed to switch control of at least one electronically commutated motor between torque control, voltage control, and current control as set forth in claim 3. None of the prior art of record teaches or suggests an apparatus with a controller configured to detect the torch ECM and to switch control from a voltage or current regulation state to a torque regulation




Art Unit: 1725

state as set forth in claim 29. Claims 30-32 are directed to allowable subject matter at least because they depend from claim 29.

Any inquiry concerning this communication should be directed to Clifford C Shaw at telephone number 571-272-1182. The examiner can normally be reached on Monday through Friday of the first week of the pay period and on Tuesday through Friday of the second week of the pay period.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Patrick J. Ryan, can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Clifford C Shaw  
Primary Examiner  
Art Unit 1725

March 18, 2007